IBM SPSS Statistics - Essentials for R: Installation Instructions for Mac OS

The following instructions are for installing IBM® SPSS® Statistics - Essentials for R on Mac OS operating systems.

Overview

IBM® SPSS® Statistics - Essentials for R provides you with tools you need to start developing custom R applications for use with IBM® SPSS® Statistics. It includes the following:

▶ The IBM® SPSS® Statistics - Integration Plug-in for R for SPSS Statistics 21

▶ A set of working examples of R applications for SPSS Statistics

Install the IBM SPSS Statistics application

IBM® SPSS® Statistics - Essentials for R is designed for the following applications:

- IBM SPSS Statistics for Mac OS

There are no additional operating system and hardware requirements. The components installed with Essentials for R work with any valid IBM® SPSS® Statistics license.

If you have not already done so, follow the instructions provided with the software to install one of the SPSS Statistics applications on the computer where you will install Essentials for R.

Download and install R 2.14

Version 21 of IBM® SPSS® Statistics - Essentials for R requires R version 2.14 (version 2.14.2 is recommended). Install R on the computer where you will install Essentials for R. It is available from *http://www.r-project.org/*. You can also download it directly from *ftp://ftp.stat.math.ethz.ch/Software/CRAN/bin/macosx/leopard/base/*.

Download and install IBM SPSS Statistics - Essentials for R

Be sure to use a version of IBM® SPSS® Statistics - Essentials for R that is compatible with the version of IBM® SPSS® Statistics on your machine. Within a major version of SPSS Statistics, such as 21, you must use a version of Essentials for R that has the same major version. It is not necessary to uninstall earlier versions of Essentials for R before installing a newer version.

For users who are working in distributed mode (with SPSS Statistics Server) please install Essentials for R on both the client and server machines.

▶ Download version 21 of Essentials for R, available from the SPSS community at *http://www.ibm.com/developerworks/spssdevcentral*.

▶ Mount the installer disk image by double-clicking the file that you downloaded.

▶ In the mounted disk image, double-click *SPSSStatisticsEssentialsForR_21000_Mac*, and then follow the instructions that appear on the screen. When prompted for the location of SPSS Statistics, note that the default location is */Applications/IBM/SPSS/Statistics/21*. When prompted for the location of R, be aware that this is the location where R 2.14 is installed. If R 2.14 is the current R version on your machine then the location can be specified as */Library/Frameworks/R.framework/Resources*. Otherwise, specify the location as */Library/Frameworks/R.framework/Versions/2.14/Resources*.

Silent installation

As an alternative to the manual installation described above you can also run a silent installation. This is most useful for network administrators who need to install to multiple end users. To run a silent installation, do the following:

▶ If you haven't already done so, then mount the installer disk image by double-clicking the file that you downloaded.

▶ Copy *SPSSStatisticsEssentialsForR_21000_Mac.bin* from the disk image to a different location—for example, to the desktop.

▶ Start a terminal application.

▶ Change to the directory where you copied *SPSSStatisticsEssentialsForR_21000_Mac.bin*.

▶ Using a text editor, create a response file named *installer.properties*.

▶ Add the following properties and associated values to the response file:

```
INSTALLER_UI=silent
USER_SPSS_HOME=<IBM SPSS Statistics location>
USER_R_HOME=<R 2.14 home directory>
```

where <IBM SPSS Statistics location> is the installation location of IBM SPSS Statistics and <R 2.14 home directory> is the installation location of R 2.14. For example:

```
USER_SPSS_HOME=/Applications/IBM/SPSS/Statistics/21
USER_R_HOME=/Library/Frameworks/R.framework/Versions/2.14/Resources
```

▶ Save *installer.properties* to the directory containing the *.bin* file for Essentials for R and change to that directory.

▶ Run the installer with the following command:

```
./<installer_name>
```

where *<installer_name>* is the name of the *.bin* file for Essentials for R. *Note*: You must run the previous command as root, either by logging in as root or using the `sudo` command.

As part of the installation, any R packages required by the R examples will be automatically downloaded over the Internet if possible. This may take a few minutes.

Note: To use a different response file (other than *installer.properties*), run the installer with the following command:

```
./<installer_name> -f <response file name>
```

Before you start using the IBM SPSS Statistics - Integration Plug-in for R

After you install IBM® SPSS® Statistics - Essentials for R, you will be able to start developing R applications with the IBM® SPSS® Statistics - Integration Plug-in for R. Complete documentation for the plug-in is available from the topic "Integration Plug-in for R" in the IBM® SPSS® Statistics Help system. It is also available in PDF form by choosing Programmability > R Plug-in from the SPSS Statistics Help menu. You may also want to go through the tutorials available from Help>Working with R.

Accessing the R examples

IBM® SPSS® Statistics - Essentials for R includes a set of working examples of custom R procedures for IBM® SPSS® Statistics. All examples include custom dialogs and all but one (Rboxplot) also include an extension command. Following are the menu locations of the custom dialogs for the R examples:

■ Analyze>Correlate>Heterogeneous Correlations

■ Analyze>Loglinear>Latent Class Analysis

■ Analyze>Regression>Quantile Regression

■ Analyze>Regression>Regression Relative Importance

■ Analyze>Regression>Residual Heteroscedasticity Test

■ Analyze>Regression>Robust Regression

■ Analyze>Regression>Tobit Regression

■ Analyze>Scale>Rasch Model

■ Graphs>R Boxplot

The Heterogeneous Correlations example requires both the IBM® SPSS® Statistics - Integration Plug-in for R and the IBM® SPSS® Statistics - Integration Plug-in for Python. The Integration Plug-in for Python is included with IBM® SPSS® Statistics - Essentials for Python, available from the SPSS community at *http://www.ibm.com/developerworks/spssdevcentral*.

If one of the Analyze menu items is not present in your SPSS Statistics product, then please look on the Custom menu for the Analyze menu dialogs—for example, Custom>Heterogeneous Correlations.

The implementation code and XML specification files for extension commands associated with the custom dialogs can be found in the */Library/Application Support/IBM/SPSS/Statistics/21/extensions* directory. The following files are installed:

■ **Heterogeneous Correlations.** *SPSSINC_HETCOR.py* and *SPSSINC_HETCOR.xml*

■ **Quantile Regression.** *SPSSINC_QUANTREG.R* and *SPSSINC_QUANTREG.xml*

- **Residual Heteroscedasticity Test.** *SPSSINC_BREUSCH_PAGAN.R* and *SPSSINC_BREUSCH_PAGAN.xml*
- **Robust Regression.** *SPSSINC_ROBUST_REGR.R* and *SPSSINC_ROBUST_REGR.xml*
- **Tobit Regression.** *SPSSINC_TOBIT_REGR.R* and *SPSSINC_TOBIT_REGR.xml*
- **Rasch Model.** *SPSSINC_RASCH.R* and *SPSSINC_RASCH.xml*
- **Latent Class Analysis.** *STATS_LATENT_CLASS.R* and *STATS_LATENT_CLASS.xml*.
- **Regression Relative Importance.** *STATS_RELIMP.R* and *STATS_RELIMP.xml*.

Notes

- Help for each of the procedures accessible from the menus is available from the Help button on the associated dialog box. The help is not, however, integrated with the SPSS Statistics Help system.
- Complete syntax help for each of the extension commands associated with the custom dialogs is available by executing the command and including the /HELP subcommand. The command name is the name of the associated implementation file without underscores—for example:

```
SPSSINC HETCOR /HELP.
```

  The command syntax help is not, however, integrated with the SPSS Statistics Help system and is not included in the *Command Syntax Reference*.

- The dialogs were created with the Custom Dialog Builder in SPSS Statistics. You can view the design for any of the dialogs and/or customize them using the Custom Dialog Builder, available from Utilities>Custom Dialogs>Custom Dialog Builder. To view the design for a dialog, choose File>Open Installed from within the Custom Dialog Builder.
- If you have specified alternate locations for extension commands with the *SPSS_EXTENSIONS_PATH* environment variable then the implementation and specification files will be located in the first writable location in that variable instead of in the *extensions* directory.
- You may need to set your SPSS Statistics locale to match the SPSS Statistics output language (OLANG) in order to display extended characters properly, even when working in Unicode mode. For example, if the output language is Japanese then you may need to set your SPSS Statistics locale to Japanese, as in SET LOCALE='japanese'.
- Other extension commands that are not included in Essentials for R are available for download from the SPSS community.

Uninstalling IBM SPSS Statistics - Essentials for R components

▶ Browse to */Library/Frameworks/R.framework/Versions/2.14/Resources/library* and remove the *spss210* folder.